

METHOD OF SILICON CARBIDE MONOCRYSTALLINE BOULE GROWTH

ABSTRACT

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A method of growing a silicon carbide single crystal on a silicon carbide seed
crystal in an inert gas environment includes the step of raising the seed crystal
5 temperature to a growth temperature T_{seed} and raising the temperature of source material
to a growth temperature T_{source} that is lower than T_{seed} to define a thermal gradient
therebetween. The process also requires maintaining constant seed temperature and
constant source temperature throughout substantially the entire growth period of the
single crystal. The growth period begins when the seed crystal and source material reach
10 T_{seed} and T_{source} . Another step requires changing only the pressure of the inert gas during
the growth period to control the growth rate of the crystal rather than changing any
temperatures to control the growth rate once growth of the single crystal has started.